Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Canceled)

2. (Canceled)

3. (Canceled)

4. (Previously Amended) A semitransparent optical detector comprising:
a semitransparent PIN diode having at least one polycrystalline semiconductor layer, wherein the polycrystalline semiconductor is a polycrystalline alloy of silicon and germanium.

5. (Original) The detector of claim 4, wherein the polycrystalline alloy is microcrystalline.

6. (Previously Amended) The detector of claim 4, wherein the PIN diode has another layer of at least one of an amorphous semiconductor and a microcrystalline semiconductor.

7. (Previously Amended) The detector of claim 4, further comprising:
a transparent substrate upon which the PIN diode is disposed.

8. (Original) The detector of claim 7, further comprising:
a transparent conductor disposed on a surface of the PIN diode.

Claims 9-18. (Canceled)

19. (Original) A semitransparent optical detector comprising:
a PIN diode having amorphous silicon P and N layers; and
an intrinsic I layer of an alloy of silicon and germanium.

20. (Original) The detector of claim 19 on a transparent substrate.

21. (Original) The detector of claim 20 wherein the substrate is glass.

22. (Original) The detector of claim 20 wherein the substrate is a polymer.

23. (Original) The detector of claim 20 wherein the substrate is silicon which is transparent at a wavelength greater than about 1100 nm.

24. (Original) The detector of claim 19, wherein the concentration of germanium in the I layer is graded from a relatively low concentration adjacent the P and N layers to a relatively high concentration in the interior of the I layer.

Claims 25-42. (Canceled)

43. (Currently Amended) A semitransparent optical detector comprising:

a thin film PIN diode which both detects and is semitransparent to light having a wavelength λ;

a first conductor at least partly covering and contacting a first surface of the PIN diode, the first conductor being semitransparent to light having the wavelength λ;

a second conductor at least partly covering and contacting a second surface of the PIN diode, the second surface being opposite the first surface and also being semitransparent to light having the wavelength λ; and

a passivation layer covering and enclosing all edges of the PIN diode, defining an aperture exposing at least a portion of the first surface of the PIN diode, and exposing a part of the second semitransparent conductor for contact thereto.

44. (Currently Amended) The detector of claim 43, the passivation layer having a hole defined therethrough, through which contact is made with the second semitransparent conductor.

45. (Currently Amended) The detector of claim 43, further comprising:

a patterned metal layer over the passivation layer, including a first conductor entering the aperture to contact the first semitransparent conductor and a second conductor contacting the second semitransparent conductor.

46. (Currently Amended) The detector of claim 45, wherein the second conductor contacts the second semitransparent conductor through a hole defined in the passivation layer.

47. (Previously Amended) A semitransparent optical detector comprising:

a thin film PIN diode;

a first transparent conductor at least partly covering and contacting a first surface of the PIN diode;

a second transparent conductor at least partly covering and contacting a second surface of the PIN diode;

a passivation layer covering and enclosing all edges of the PIN diode, defining an aperture on one surface thereof, and exposing a part of the second transparent conductor for contact thereto, wherein the first transparent conductor extends partly over the passivation layer; and

a patterned metal layer over the passivation layer, including a first conductor contacting the first transparent conductor without entering the aperture and a second conductor contacting the second transparent conductor.

48. (Original) The detector of claim 47, wherein the second conductor contacts the second transparent conductor through a hole defined in the passivation layer.

49. (Original) The detector of claims 45 or 47, wherein the thin film PIN diode extends to a contact pad position and the first conductor defines a path on the surface of the PIN diode to the contact pad position.

50. (Previously Amended) The detector of claim 49, wherein a region contacted by at least one of the first and second transparent conductors defines a limited active area less than all of the PIN diode.

51. (Original) The detector of claims 45 or 47, wherein the PIN diode has tapered edges, a top surface of the PIN diode having a smaller area than a bottom surface thereof.

52. (Original) The detector of claim 43, wherein the passivation layer is silicon nitride.

53. (Original) The detector of claim 43, wherein the passivation layer is silicon dioxide.

Claims 54-55. (Canceled)

56. (Previously Amended) A small aperture semitransparent optical detector comprising:

a first conductive layer;

a PIN diode which is semitransparent to and detects light of wavelength λ;

a passivation layer covering and enclosing all edges of the PIN diode and defining an aperture exposing an upper surface of the PIN diode, wherein the first conductive layer extends partially under the PIN diode and electrically contacts a bottom surface of the PIN diode leaving unobstructed a portion of the bottom surface directly opposite the aperture so that light can pass through the aperture into the diode and out of the bottom surface without being obstructed by the first conductive layer; and

a second conductive layer contacting the surface of the PIN diode through the aperture.

57. (Previously Amended) The detector of claim 56, wherein the second conductive layer covers the aperture and is ~~a~~ transparent to light of wavelength λ, the detector further comprising:

a third conductive layer contacting the second conductive layer outside the aperture.

58. (Previously Amended) The detector of claim 56, wherein the first conductive layer extends under the PIN diode on only one side and the second conductive layer contacts the exposed surface of the PIN diode in an area that is generally diagonally opposite where the first conductive layer extends under the PIN diode.

Claims 59-63. (Canceled)

64. (Previously Amended) The detector of claim 43, wherein the first transparent conductor extends partly over the passivation layer, the detector further comprising:

a patterned metal layer over the passivation layer, including a first conductor contacting the first transparent conductor without entering the aperture and a second conductor contacting the second transparent conductor.

65. (Previously Amended) The detector of claim 56, wherein the first side of the PIN diode is one of the p-doped side and the n-doped side of the PIN diode and the exposed surface is of the other of the p-doped side and the n-doped side of the PIN diode.

66. (Previously Amended) The detector of claim 56, further comprising a substrate onto which the first conductive layer is formed, wherein the substrate is transparent to light of wavelength λ, the first conductive layer defines an open area which exposes the underlying substrate, and the PIN diode is formed on the substrate in the open area and partially extending onto the first conductive layer.